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Steam Power

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The Parsons Brothers, who were Albert Seeley's contractors in 1869 had a shop was driven by steam powered engines. Although the driving force of the Industrial Revolution, powering everything from ships to factories to mining operations, to locomotives, steam power today is considered almost obsolete. But on August 25, 2009 a new land speed record of 137.84 mph average was set -- in two official runs of 136 mph, and 151 mph -- by "The World's Fastest Kettle." This broke the old record of 127 mph set in 1906 by American Fred Marriott in a modified version of the Stanley Steamer, "The locomotive of the highways."

The purpose of a steam engine is to convert the potential energy of steam into work. The most basic example can be done with a tea kettle and a pinwheel. When the water in the kettle is boiling, it produces steam, which escapes out the spout. Holding a pinwheel in front of the escaping steam will spin the pinwheel. While this example is easy to see, it has some obvious drawbacks, you have to hold the pinwheel in the hot steam, and it is far too small to operate any equipment capable of much work. It certainly would not drive a train up a mountain.

No one person invented the steam engine. The first crude steam engine was patented in 1698 by Thomas Savery, an English military engineer and inventor. He wanted an engine that would pump water out of coal mines. His engine was based on Denis Papin's 1679 pressure cooker called "Digester." Next, in 1712, Thomas Newcomen together with John Calley built their first engine to be used for the same purpose. James Watt, a Scottish inventor and mechanical engineer, (when you hear the word Watt, as in a 100 Watt bulb, it is named after James Watt) was assigned to repair one of Newcomen's engines, and noted it was not extremely efficient. He worked to improve the design, and in 1769 patented his design, which had a separate condenser connected with a valve, and could be cool while the cylinder was hot. The main drawback to Watt's engine was that it used a push/pull operation on a pump, and most factories ran on circular motion like a water wheel would produce.

Thomas Edison may have gleaned one of his best ideas from Watt, an "invention shop." Watt, like Edison almost 200 year later, hired bright minds to invent and improve existing machines and devices. William Murdoch was one of those minds, and he designed a gear system converting the push/pull of Watt's engine to circular motion. The gear system was later refined into a connecting rod and flywheel. Gasoline powered internal combustion engines used in autos today use connecting rods and flywheels to do the same task, convert push/pull motion of cylinders into circular motion.